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RESTRICTED
INFORMATION REPORT

COUNTRY Czechoslovakia

DATE DISC

SUBJECT Zlin - 281

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General Description

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1. The designers of Zlin-281 claim it represents the highest development in construction and design in the field of training and tourist planes. A high degree of safety permits elementary training, as well as acrobatic training with dual control, and special acrobatics with one person.

With loss of speed the plane behaves quietly, gives prior warning, and doesn't fall on one wing. It comes out of a spin without the pilot's help. Comfortable control, good visibility and a 1,200 km range at a cruising speed of 190-200 km/hr, make this suitable plane for tourist purposes.

2. Zlin-281 is equipped with mechanical brakes, blocking skid wheel, landing flaps and an attachment for longitudinal training of the plane in flight. Seats and pedal controls can be adjusted during flight. A great advantage is the excellent visibility from the cabin, which permits sight of the entire field during taxiing.

Technical Description

3. Fuselage: The front portion is welded from steel tubes with a covering consisting partly of removable tin-plate sections partly of fabric. The rear part of the fuselage is of wood, in monocoque construction; it is joined to the front portion at four points. The left side of the cabin's plexiglass cowling has a roller blind for blind flying. Windows on top and at the sides of the luggage space provide good rear vision.
4. The wings are of wood and consist of an intersectional main spar and an auxiliary front spar. The leading edge is ply-covered up to the rear spar; the remainder is fabric-covered. The wing's hinges are forgings, connected with the spar by screws and Heine-metalwood. The rear spar is connected with the central part of the fuselage by a vertical pivot, and the front spar by two horizontal pivots. The ailerons, made of fabric-covered wood, are statically and aerodynamically balanced. There is a compensation tab on the trailing edge. Landing flaps are metal and hinged to the auxiliary spar.

118

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- 2 -

5. Tail Plane: The veneered wood cantilever stabilizers are fitted to the fuselage in three places. The elevator is fabric-covered wood with a ply-covered leading edge. It is aerodynamically and statically balanced and has a controlling tab on the left side. The fin is veneered wood. The rudder is fabric-covered wood and is balanced statically and aerodynamically. On the trailing edge is a compensation tab.
6. The Undercarriage is self-carrying and fixed. The shock absorber system consists of spiral springs and an oil cylinder. The turnable tail skid's movements can be related with the movements of the rudder.
7. Control: The plane has dual control with cables and profile wiring operating the control units. The right rudder bar is removable. Foot pedal control is provided by a lever on the panel board.
8. Engine: The plane's four-cylinder Tama 4 engine has a maximum capacity of 105 hp at 2,550 rpm and is started by hand. The engine bed has two carriers attached to the fuselage with four vertical pivots. The engine rests on four rubber mountings that absorb vibration. Its cowling has adjustable side covers which provide easy access to the engine and installation. The 120-liter fuel tank, made of aluminum tin, is mounted behind the seats. A pneumatic fuel indicator is on the panel board. The oil tank, of about 8 liter capacity, is mounted on the engine.
9. Equipment

The plane's equipment includes:

| | <u>For Blind Flying</u> | <u>For training in Blind Flying</u> |
|--|-----------------------------|---|
| rpm Indicator | 1 | 1 |
| Combined thermometer & oil gauge | 1 | 1 |
| Fuel pressure gauge | 1 | 1 |
| Fuel indicator | 1 | 1 |
| Pump for fuel indicator | 1 | 1 |
| Pressure pump | 1 | 1 |
| Tachometer | 1 | 2 |
| Altimeter (landing) | 1 | 2 |
| Compass | 1 | 2 |
| Turn and bank indicator | 1 | 2 |
| Variazometer with bottle | 1 | 2 |
| Engine switch | 1 | 1 |
| Artificial horizon - only on request | 1 | 1 |
| Pitot static tube | 1 | 1 |
| Fire extinguisher | 1 | 1 |
| Set of tools for structure | 1 | 1 |
| Set of tools for engine | 1 | 1 |
| Upholstered seat cushions | 2 | 2 |
| Upholstered back cushions | 2 | 2 |
| Hub of the Pitot static tube | 1 | 1 |
| Propeller hub | 1 | 1 |
| First aid box | 1 | 1 |
| Roller blind | - | 1 |
| <u>Electric accessories:</u> | | |
| Accumulator | 1 | 1 |
| Panel board lighting | 1 | 1 |
| Navigator lights | 3 | 3 |
| Control lamp for warning up of Pitot static tube | 1 | 1 |
| Switches | 5 | 5 |
| Searchlight | 1 | 1 |

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- 3 -

General Data

| | | |
|-------------------|---|---|
| Rehearsal | 1 | 1 |
| Pair of skis | 1 | 1 |
| Cowling of engine | 1 | 1 |

Technical Data

The following data was obtained from the Zima-201:

Dimensions

| | | | |
|-------------------|----------------------|--------------------------------|---------------------|
| Wing span | 10.65 m | Dihedral | 5.5° |
| Length | 7.85 m | Incidence | 4° |
| Height | 2.95 m | Rudders | 1.65 m ² |
| Wheel track width | 2.90 m | Elevators | 2.62 m ² |
| Wing area | 13.50 m ² | Tire dimensions, undercarriage | 165 cm x 165 cm |
| Landing flaps | 1.20 m ² | Skid tire dimension | 260 cm x 85 cm |

Performance

| | |
|------------------------------|-----------|
| Maximum speed (at sea level) | 210 km/hr |
| Cruising speed | 190 km/hr |
| Rate of climb (at sea level) | 2.6m/sec |

(Note: In the original Czech this figure "2" was very indistinct. It could be a "0".)

| | |
|----------------------------------|----------|
| Service ceiling | 6,000 m |
| Cruising range at cruising speed | 1,200 km |

Fuel Capacity

| | |
|-----------|------------|
| Fuel tank | 120 liters |
| Oil tank | 8 liters |

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Next 1 Page(s) In Document Exempt

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